

REMARKS

Claims 1, 3, 4, 7, 9-13, 15, 17, 20-22, 25 and 29-33 are now pending in the application. Claims 5 and 19 have been cancelled. Claims 1, 3-7, 9-13, 15, 17-25, 27-33 stand rejected. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 112

Claims 1, 3-5,7,9-13,15,17, 19-22, 25 and 29-33 were rejected because the Examiner believed that there was insufficient support in the specification for the language used in the independent claims as to "without requiring shrinkage." While the undersigned respectfully disagrees with this determination, merely in the interest of expediting prosecution of this application, this language has been deleted from the claims.

DOUBLE PATENTING

The undersigned has reviewed the pending claims and can not understand the Examiner's remarks concerning the duplicative nature of claims 18-21 versus claims 23-24 and 27-28. These claims are clearly different from one another. Reconsideration of this remark is respectfully requested.

REJECTION UNDER 35 U.S.C. SECTION 103

In the final Office Action, the Examiner reiterated the rejection of claims 13, 15, 17-25 and 27-33 as being obvious over Graff (U.S. Pat. No. 3,074,832) in view of Day et

al. (U.S. Pat. No. 5,665,450) and Padden (U.S. Pat. No. 5,500,272). This rejection is respectfully traversed.

Initially the Examiner will note that independent claim 13 has been amended to more positively recite that the operation of providing a pre-impregnated resin tape comprised of a plurality of fibers involves using a resin tape impregnated with a shrinkage resistant, transparent aliphatic epoxy resin. Claim 1, while not specifically mentioned in this rejection, has been amended along similar lines.

It is respectfully submitted that this subject matter is not disclosed or suggested by the Graff/Day et al./Padden combination. Graff involves the construction of a window plate that absolutely requires shrinkage of the resin to impart its needed degree of structural strength. This is emphasized in Column 1, lines 41-46, Column 3, lines 48-62, and in Column 4, lines 5-9. The shrinkage of the resin in Graff is important to because the resin needs to "taughten on the frame", as explained in Column 1, lines 41-46. However, the presently claimed operations in claim 13 make use of a pre-impregnated resin tape that is impregnated with an aliphatic epoxy resin. It is well understood in the materials sciences arts that aliphatic epoxy resin has essentially negligible shrinkage. In the present instance, aliphatic epoxy resin would be unsuitable for use in manufacturing Graff's window because such a resin would not be able to impart the shrinkage required to taughten on the frame as the resin cures. Graff also does not appear to suggest using fibers in the resin where the fibers and the resin have generally matching indices of refraction.

Importantly, there is also no mention in Graff that the window plate described therein is suitable for use with an airborne mobile platform, or more specifically with a

fuselage of an airborne mobile platform. This is obviously because the window in Graff would only be manufacturable to form a flat window (Column 3, lines 33-62). Flat windows are rarely used in airborne vehicles, and most definitely not in commercial aircraft that must have their interior fuselages pressurized to normalize the interior area of the aircraft for human passengers. As noted in Figure 1, the present window is for a large commercial aircraft (i.e., not a small private aircraft such as a Cessna). The type of window disclosed in Graff (i.e., a flat window) would be completely unsuited for use in a large commercial, pressurized aircraft. Such aircraft require a slightly curved window which simply could not be manufactured from Graff's teachings because of the required shrinkage of the resin to taughten the window frame. Thus, it will be understood that Graff is completely inapplicable for making a window that could be employed on a large commercial passenger aircraft.

There is further no suggestion from Day et al. that the composite window structure described therein could be implemented in a method for forming a window having an integrally manufactured metal frame that forms a peripheral portion of the window. Conversely, there is no suggestion in Graff of using fibers and resin that have matching indices of refraction to produce a highly transparent window area. There simply is nothing in Day et al. that might suggest to one of ordinary skill in this art the desirability of this combination, so as to motivate one of ordinary skill to combine the teachings of these two references as the Examiner has done. The Examiner has also not pointed to any specific characteristic or shortcoming of Day et al. that might possibly motivate one of ordinary skill in this art to combine the Day et al. and Graff references.

Padden does not even involve the manufacture of a window, but rather a graphite epoxy pre-preg ply structural panel that is reinforced with at least one metal layer. In addition, the metal layer does not form strictly a peripheral portion of the window. Padden further makes no mention of using just a perimeter portion of the metal layer to thus form window area. In short, there is nothing in Padden that might suggest the desirability of using the teachings in Padden and applying them to form a structural panel having a transparent window portion. At most, Padden mentions using pre-preg graphite epoxy ply that is bonded to the metal frame. Moreover, there is nothing in Padden that would suggest using a pre-impregnated resin tape impregnated with an aliphatic epoxy resin in forming the window areas of a structural panel.

It is most respectfully asserted that the present combination of references that the Examiner has picked could not present a clearer example of hindsight reconstruction of the claimed subject matter of the application. There is simply no desirability (or short comings) apparent from the references themselves that might have clued one of ordinary skill in this art to the desirability of combining the features of each reference as the Examiner has done in this instance. As the Examiner will appreciate, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. For these reasons, reconsideration and withdrawal of this rejection based on the Graff/Day et al./Padden combination of references is most respectfully requested.

Claims 13, 15, 17-25 and 27-33 were finally rejected as being obvious over Graff/Day et al./Padden and further in view of Skubic et al. (U.S. Pat. No. 5,039,566).

This rejection is also respectfully traversed. Skubic et al., while being directed to a transparent composite window for an aircraft, does not suggest the desirability of manufacturing a composite window with the peripheral frame structure as recited in the claims. Again, there is simply nothing in Skubic et al. that would suggest to one of ordinary skill in this art the method of forming an optically transparent composite window structure that includes a metal peripheral frame structure. Thus, there is nothing in Skubic et al. that would motivate one of ordinary skill to combine its teachings with the those of Graff, Day et al. and Padden to produce the subject matter of independent claim 13.

Claims 1, 3-7 and 9-12 were finally rejected as being obvious over Graff/Day et al./Padden and Skubic et al., as applied to claims 13, 15, 17-25 and 27-33 above, and further in view of Shorr (U.S. Pat. No. 3,081,205). Shorr is directed to a window assembly, however, there is no suggestion of the desirability of including its teachings in connection with the other limitations recited in independent claim 1 (e.g., matching indices of refraction of the fibers and resin; using a peripheral frame structure that is formed as an integral portion of a transparent window assembly). Again, the isolated teachings of Shorr appear to have been combined in hindsight with those of the other cited references to construct the obviousness rejection. Accordingly, reconsideration is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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